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The Hawker Audax & Hardy

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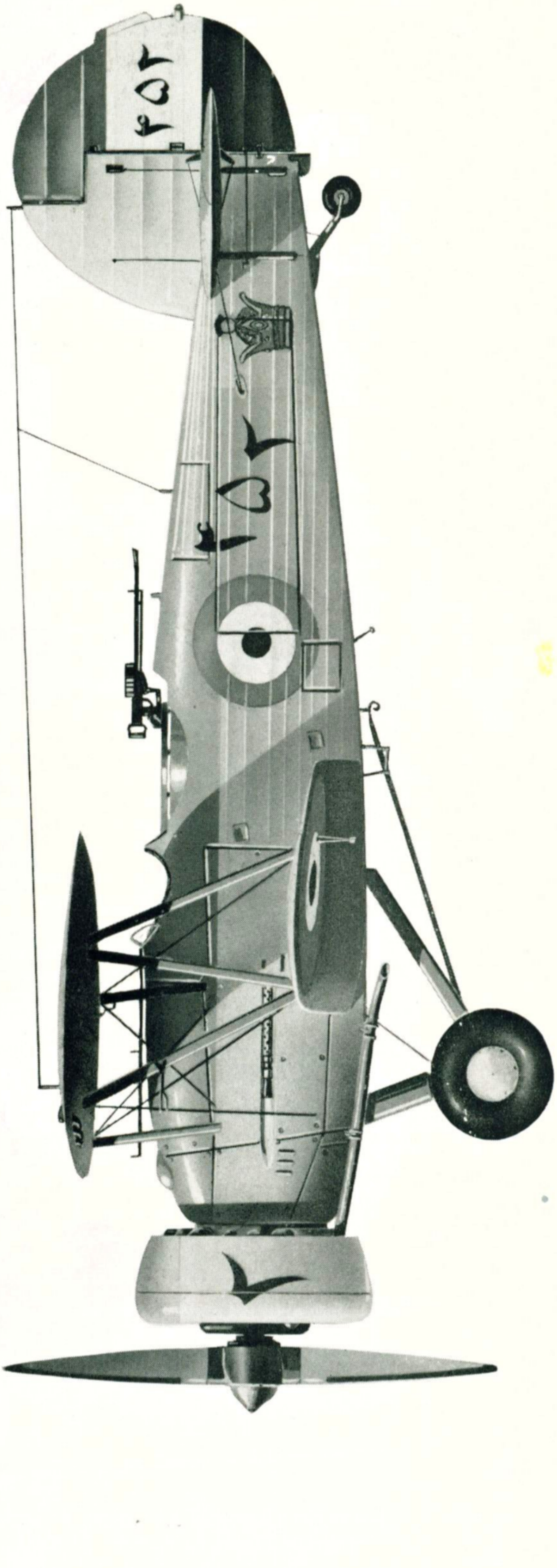
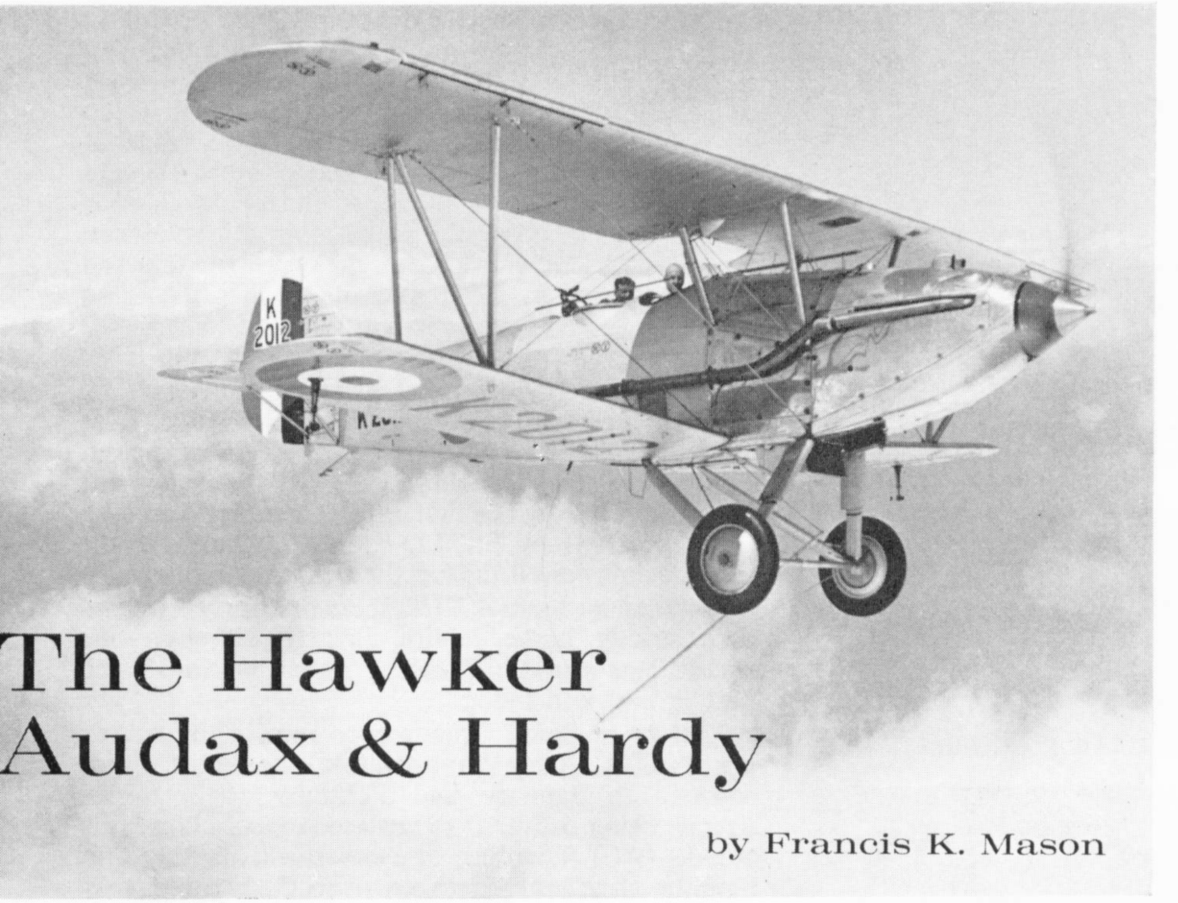


The Hawker Audax & Hardy

by Francis K. Mason



Undoubtedly the best-known of all Hawker test pilots between the Wars was the late "George" Bulman, seen here flying an early Hawker-built Audax, K2012.
(Photo: via Hawker Aircraft Limited)

The "army co-operation" aeroplane was a product of the inter-War period, yet the operational rôle—the support of ground forces—has, throughout the entire history of military aviation, been performed in essentially the same fashion throughout; only the generic terms applied have periodically become passé. First the trench fighters, then the army co-operation family, the fighter-bombers, the ground attack fighters, the light strike and support fighters and, more recently, the counter-insurgency aircraft. The definition has been dependent upon the war environment—from trench straffing to keep enemy heads down, to tactical nuclear weapons to eliminate an enemy defence area. All have been evolved to enable the ground forces to occupy enemy positions with fewer casualties.

After the First World War the Royal Air Force narrowly escaped destruction at the collective hands of the politicians, the Field Marshals and the Admirals. It came to owe its very survival to the tenacity of Hugh Trenchard as well as its own ability to perform two tasks quickly and decisively—the resolution by a show of strength of the Chanak crisis and the accomplishing of a resolute police force in Iraq.

These early tasks were performed by an R.A.F. contingent flying a heterogeneous collection of Sopwith Snipes, D.H. 9As, Vimy's and whatnot, yet despite their realised shortcomings the speed with which they performed communications duties, strikes (*sic*) and reconnaissance—or merely provided a timely "show of strength"—transformed the traditional stalemate into favourable mastery of many situations. To a potential foe, as yet without any means of transport quicker than a recalcitrant camel at worst or a fast horse at best, the coming of the aeroplane found no immediate tactical remedy in the pages of the Koran.

After the wartime generation of such general purpose aircraft as the Snipe and D.H.9A, the first studied attempt to formulate specific requirements, evolved from active experience in the field, resulted in the appearance of the Armstrong Whitworth Atlas, an aircraft that had the theoretical capacity to perform army co-operation duties, but which fell dismally short in such significant realms as airframe strength, performance, reliability and ease of handling.

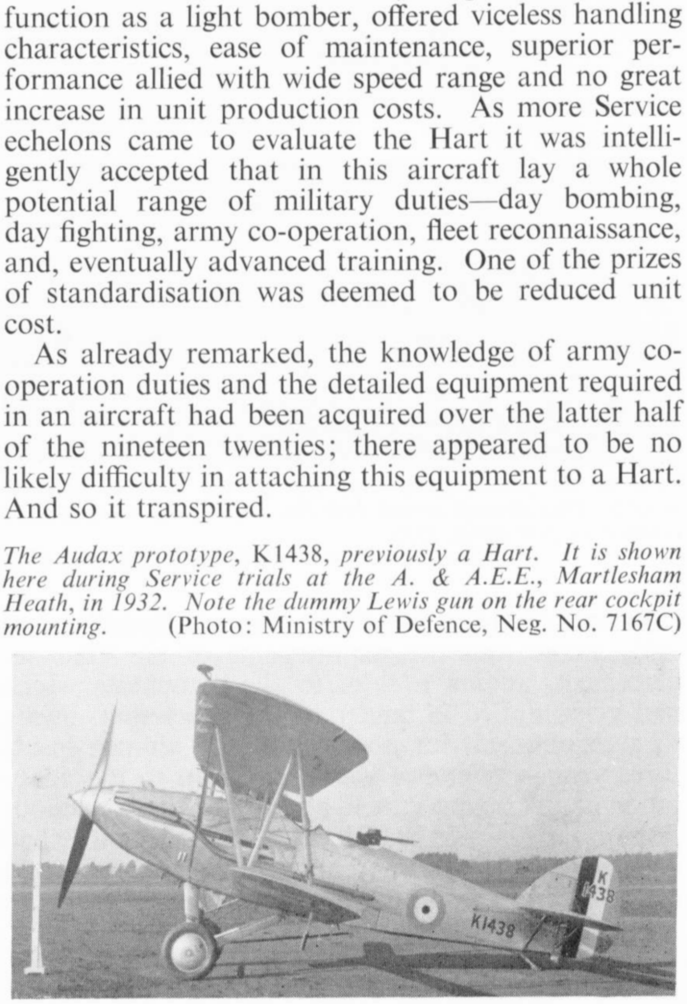
The fact that while Britain's responsibilities (often self-imposed) in the Middle East—from the Mediterranean to the North-West Frontier—had an embarrassing tendency to increase after the mid-'twenties, her defence appropriations could not. The Depression arrived. But so did the Hawker Hart.

THE 'ART WITH AN 'OOK

Here was an aircraft which, despite its primary function as a light bomber, offered viceless handling characteristics, ease of maintenance, superior performance allied with wide speed range and no great increase in unit production costs. As more Service echelons came to evaluate the Hart it was intelligently accepted that in this aircraft lay a whole potential range of military duties—day bombing, day fighting, army co-operation, fleet reconnaissance, and, eventually advanced training. One of the prizes of standardisation was deemed to be reduced unit cost.

As already remarked, the knowledge of army co-operation duties and the detailed equipment required in an aircraft had been acquired over the latter half of the nineteen twenties; there appeared to be no likely difficulty in attaching this equipment to a Hart. And so it transpired.

The Audax prototype, K1438, *previously a Hart. It is shown here during Service trials at the A. & A.E.E., Martlesham Heath, in 1932. Note the dummy Lewis gun on the rear cockpit mounting.* (Photo: Ministry of Defence, Neg. No. 7167C)



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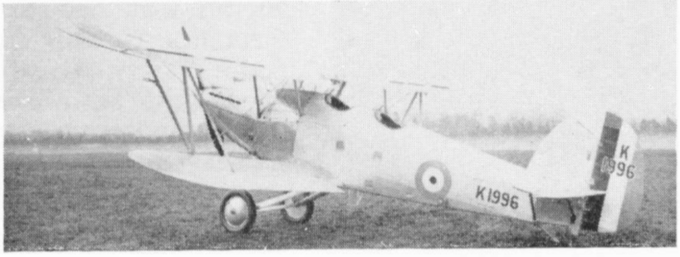
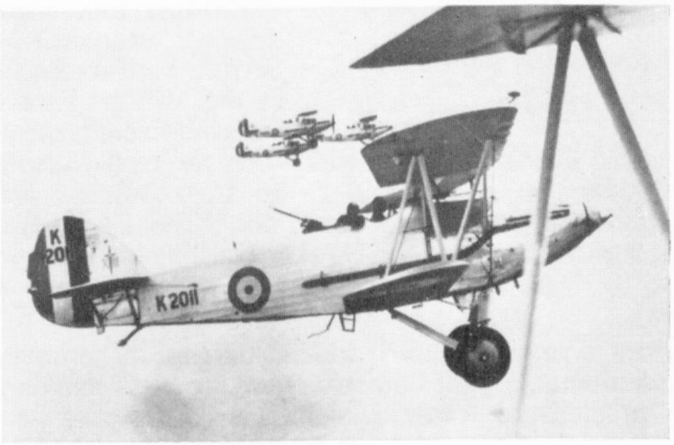
K1995



K1995 *was the first production Audax.* K1996, *however, although completed as a standard Audax and issued to No. 4 (AC) Squadron, was returned to Hawker for conversion to early Hart Trainer standard, as seen here. Later still, in about 1935, it was returned to Audax configuration and resumed its career with 4 Sqdn., only to suffer a mid-air collision on 28th May 1937.*
(Photos: Hawker Aircraft Ltd.)



Early Audaxes of No. 13 (AC) Squadron.
(Photo: via R. C. B. Ashworth)

K
3055
K3055

First of the full-standard Audaxes of the second contract, K3055. *This aircraft served with No. 2 (AC) Squadron until it crashed on 21st April, 1936.*
(Photo: Hawker Aircraft Ltd., Neg. No. 16E)

In April 1931 the Air Ministry issued a Specification, 7/31, setting out the requirements of an Atlas replacement, adding a rider to the companies which had given notice to tender to the effect that, owing to a requirement for upwards of 100 aircraft inside three years, preference would be given to the adaptation of an existing R.A.F. aircraft. In this ingenuous fashion did the Air Staff let it be known that it had already made up its mind and, indeed, only six days elapsed before a prototype contract was issued to Hawker after receipt of the Specification.

Accordingly an early-standard Hart Bomber, *K1438*, was taken out of the Fighting Area Storage at Kenley on 5th May 1931 and returned to Brooklands for installation of universal store carriers, message pick-up hook and army standby wireless equipment. These alterations occupied less than ten days and as a result of part-evaluation trials at Martlesham in June, authority was given to Hawker to transfer all Audax drawings to the Production Design Office pending the preparation of production contracts. As far as is known, the prototype returned to Martlesham in 1932, and on to the R.A.E. in July that year, where it languished and finally died of decay.

First production contract awarded to the H. G. Hawker Engineering Company for the Audax was for forty aircraft, *K1995-K2034*, these being manufactured in the Canbury Park Road factory at Kingston in 1931. The first aircraft was flown on 29th December 1931 by Flt. Lt. P. E. G. Sayer, and the remainder followed during the next two months.

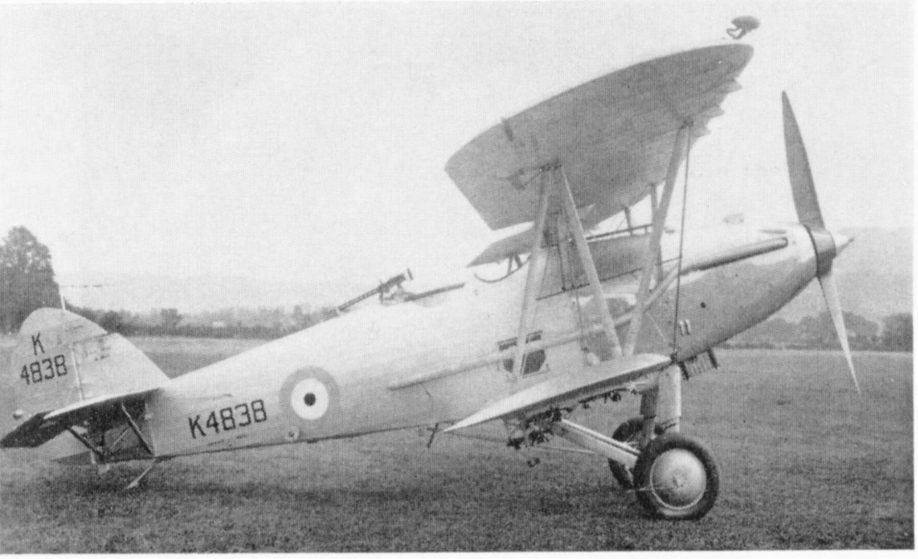
Powered by Kestrel 1B3s, these first forty Audaxes were strictly home service aircraft, although one aircraft was specially prepared for evaluation in the Middle East and India.

First home-based Squadron to receive the Audax was No. 4 (Army Co-operation) based at Farnborough in January and February 1932, twelve aircraft being delivered to replace Atlases. Next was No. 13 (AC) Squadron at Netheravon in May and June the same year. Between them these two squadrons accounted for thirty-six of the first batch and the remainder was delivered to the holding unit administered by H.Q. Western Area at Andover.

That first batch of Audaxes had an exciting career. Some lived to survive more than 1,000 flying hours, but the first aircraft, *K1995*, crashed with No. 2 (AC) Squadron on 13th August 1936 after having flown 148 hours. Many survived well into World War II and one, *K2013*, was not written off charge until 9th October 1944.

The next batch was built to the same standard as that of the first and numbered 91 aircraft, and these were scheduled to re-equip two home army co-operation squadrons, one in the Middle East and No. 4 Flying Training School in Egypt. The batch ran from *K3055* to *K3145* and the first was flown on 19th May 1933; however 17 of these aircraft were converted to Hart (Special) standard, though as such most served on units side-by-side with Audaxes. The two home-based squadrons were Nos. 2 at Manston, and 26 at Catterick, which were equipped in May-June 1933, and in the following month Audaxes commenced delivery to the Cardington Aircraft Storage Unit prior to being prepared for desert operation. This was undertaken at Henlow and the first batch of 20 aircraft was shipped from Sealand to Aboukir on 27th November 1933. It was not until 1935 however that the build-up in Egypt was sufficient to allow simultaneous issue of Audaxes to No. 208 (AC) Squadron and to No. 4 F.T.S.

By this time numerous other units at home were flying Audaxes. Apart from No. 2, 4, 13 and 26 Squadrons, No. 16 (AC) Squadron at Old Sarum had received the type. The School of Army Co-operation, forerunner of the School of Land/Air Warfare, was also flying Audaxes at Old Sarum, and the School of Photography had achieved its establised strength of eight Audaxes by the end of January 1935, while No. 24 (Communications) Squadron received two specially modified aircraft for the transport of Air Exercise referees later that year.



The Audax (India) was a special variant evolved for service in the North-West Frontier Province, powered by a Kestrel 1B5 engine. K4838 *was the first such aircraft built by the Gloster Aircraft Company.*
(Photo: Ministry of Defence, Neg. No. 8639C)

Further contracts had also been placed with Hawker for Audax production in 1934 and 1935; however such was the pressure on the Kingston and Brooklands factories with Hart, Fury, Nimrod and Osprey production that it was clear that only by widespread sub-contracting elsewhere in the industry would the necessary production build-up be achieved. With the purchase of the Gloster Aircraft Company by Hawker in 1933 it was natural that that Company should be the first choice, and Gloster-produced aircraft followed on the delivery of a pattern Audax, *K3080*, to the Brockworth factory. A. V. Roe & Co., another future member of the giant Hawker Siddeley Group, was subject of post-Depression inactivity and undertook heavy Audax production after similar use of a pattern, *K2017; K2034* went to Westlands and *K3056* to Bristols in April and May 1935, and production followed in these Companies' factories.

The year 1936 found R.A.F. expansion plans well under way. The unit establishment of army co-operation squadrons was raised from fourteen to eighteen aircraft early that year, and under ordinary circumstances the new strengths could have been achieved from the storage unit at Cardington and the Air Depôt in Egypt. A spate of accidents however (eighteen in 1935 and no less than thirty-two in 1936) caused something of a drain on second line establishments until the full effect of the expansion sub-contracts became felt.

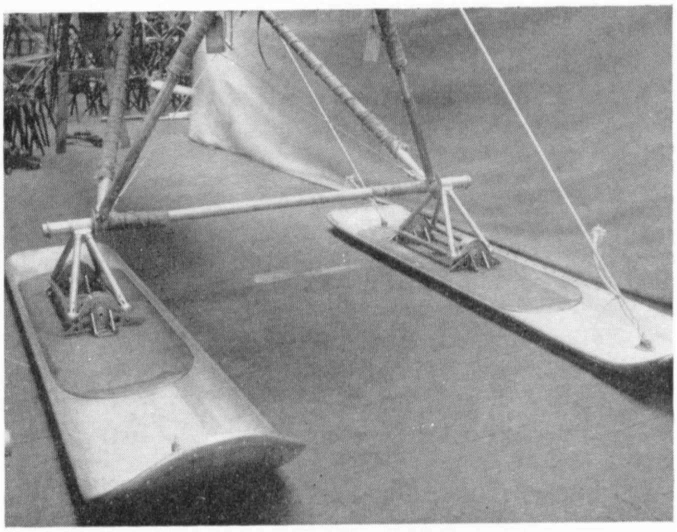
In 1937 a number of the newly re-formed bomber squadrons were established with Audaxes pending the arrival of Hind bombers or the new Battle and Blenheim light bomber monoplanes. Among these were No. 61 at Hemswell, 77 at Honington, 105 at Harwell, 114 at Wyton, 144 at Hemswell, 148 at Scampton, and 211 at Grantham, but in the event this situation only lasted until November that year when the new equipment began delivery.

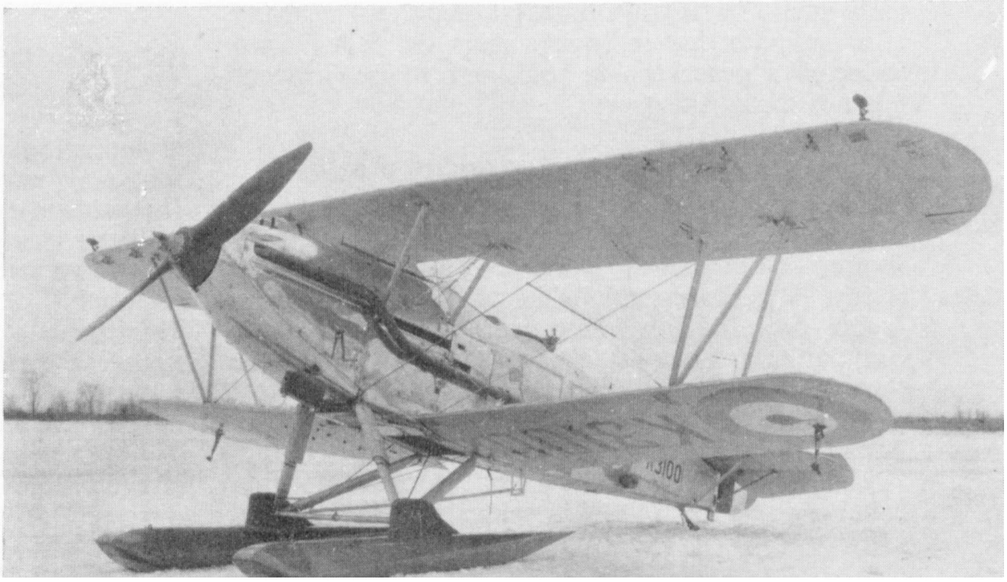
SECOND LINE DUTIES

The arrival in Service of Hawker's Audax replacement—the Hector—resulted in the withdrawal of the Audax from front line service among home squadrons towards the end of 1937. However the unsuitability of the Hector's Dagger engine for tropical service confined the new aircraft to home squadrons, and the Audax continued to serve overseas for up to six further years—of which more anon.

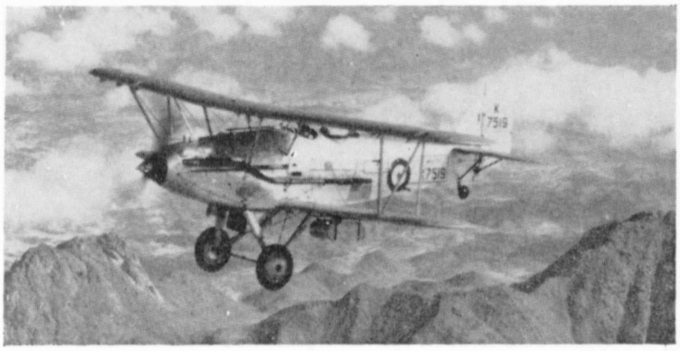
As originally anticipated, the Audax had been destined for operational training duties. Apart from the supply of standard aircraft to No. 4 F.T.S. in Egypt in 1935, limited conversion to dual control led to Audaxes being selected to provide the equipment of Nos. 2, 5, 8 and 11 Flying Training Schools in 1937, and in the following years Nos. 1, 3, 4, 6, 7, 9, 10, 12, 13, 14 and 15 took deliveries in various numbers. By mid-1939 the numerous Elementary and Reserve F.T.S. were widely equipped with Audaxes.

With the elevation of Auxiliary Air Force squadrons to the status of home defence and potential front line responsibility, Audaxes were issued to Nos. 501 and 601 Squadrons (among others) to equip H.Q.

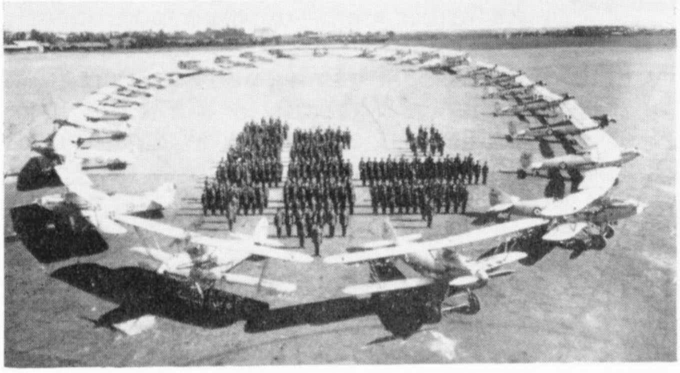




Intended as possible equipment in the Royal Canadian Air Force, the Audax underwent environmental evaluation with ski undercarriage in Canada. K3100 *was shipped out from Sealand on 11th October 1933 equipped with the skis shown above right. These proved unsatisfactory and the fully faired set was substituted as shown below right. The aircraft returned to Sealand in January 1936; it was last heard of with No. 1118 A.T.C. Squadron in May 1942.*
(Photo: The Royal Aeronautical Society)



A Bristol-built Audax, K7519 (*note addition of tailwheel*), *almost certainly belonging to No. 4 F.T.S., in flight over Middle East terrain at about the time of the outbreak of the Second World War. Removal of the message hook probably accompanied the aircraft's transfer to the training rôle, but carriage of water panniers was vitually mandatory over this sort of country.*
(Photo: Imperial War Museum, Neg. No. CH8725)



Audaxes of various vintages with No. 208 Squadron, in company with Fairey Gordons of No. 14 Squadron and Vickers Valentias of No. 216 Squadron in the Middle East. The photo was probably taken in 1936-37. Scarcely visible in this picture are the engine decking louvres introduced in a number of Kestrel-engined Hart variants to provide additional breathing in the tropics.
(Photo: via R. C. B. Ashworth)

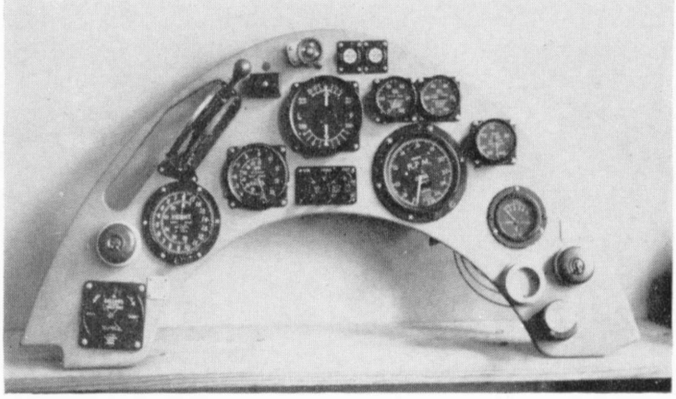
Flights for training and communications duties. At the time of Munich, 371 Audaxes were on R.A.F. Charge, including

- 92 at first line strength in overseas units,
- 36 at first line strength in home-based units,
- 141 at second line strength with training units,
- 31 at second line strength engaged on communications and other duties,
- 71 in storage at home and overseas.

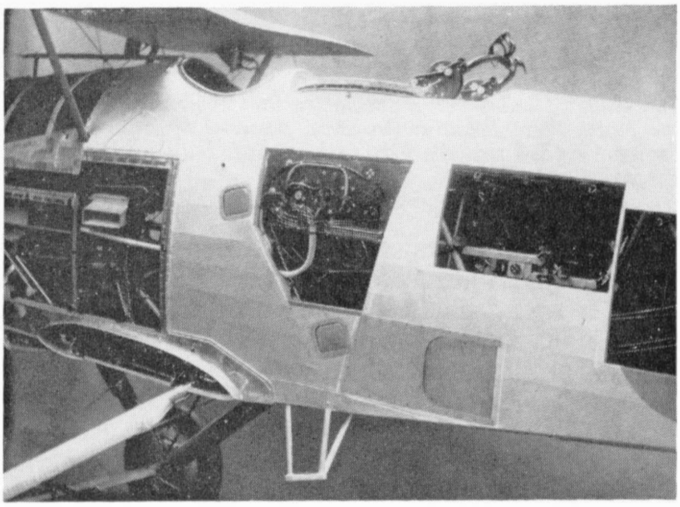
Within a year all had been withdrawn from first line service with the R.A.F., though a number had been brought to combat status in East Africa and India. However such withdrawal, as in other instances involving outmoded British biplanes, did not relegate the Audax to retirement, for it was in the Middle East that the Audax went to war—perhaps not as the sharp sword of Britain's imperial might, but certainly as a reminder that in twenty years the R.A.F. had perfected a peacekeeping rôle, and whose presence was not to be trifled with.

THE HARDY AND THE MIDDLE EAST

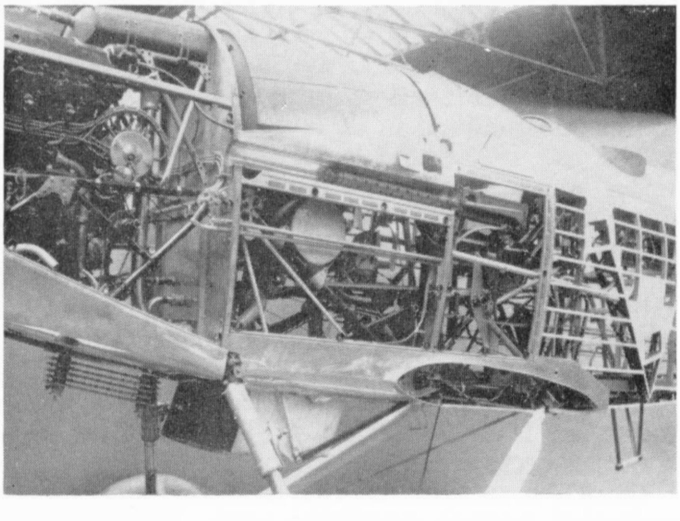
Before going on to follow the fortunes of the Audax overseas, it is necessary to observe the progress of another closely-allied Hawker Hart-variant, the Hardy. This was essentially a specialist version of the Audax prepared for desert operations, and in fact was, during its design stages referred to in turn as the Hart (Desert), Audax (Desert) and Audax (Aboukir) —the latter not to be confused with the Egyptian Audax, an aircraft later sold to that country.



Instrument panel of the Hawker Audax.
(Photo: F. K. Mason collection)

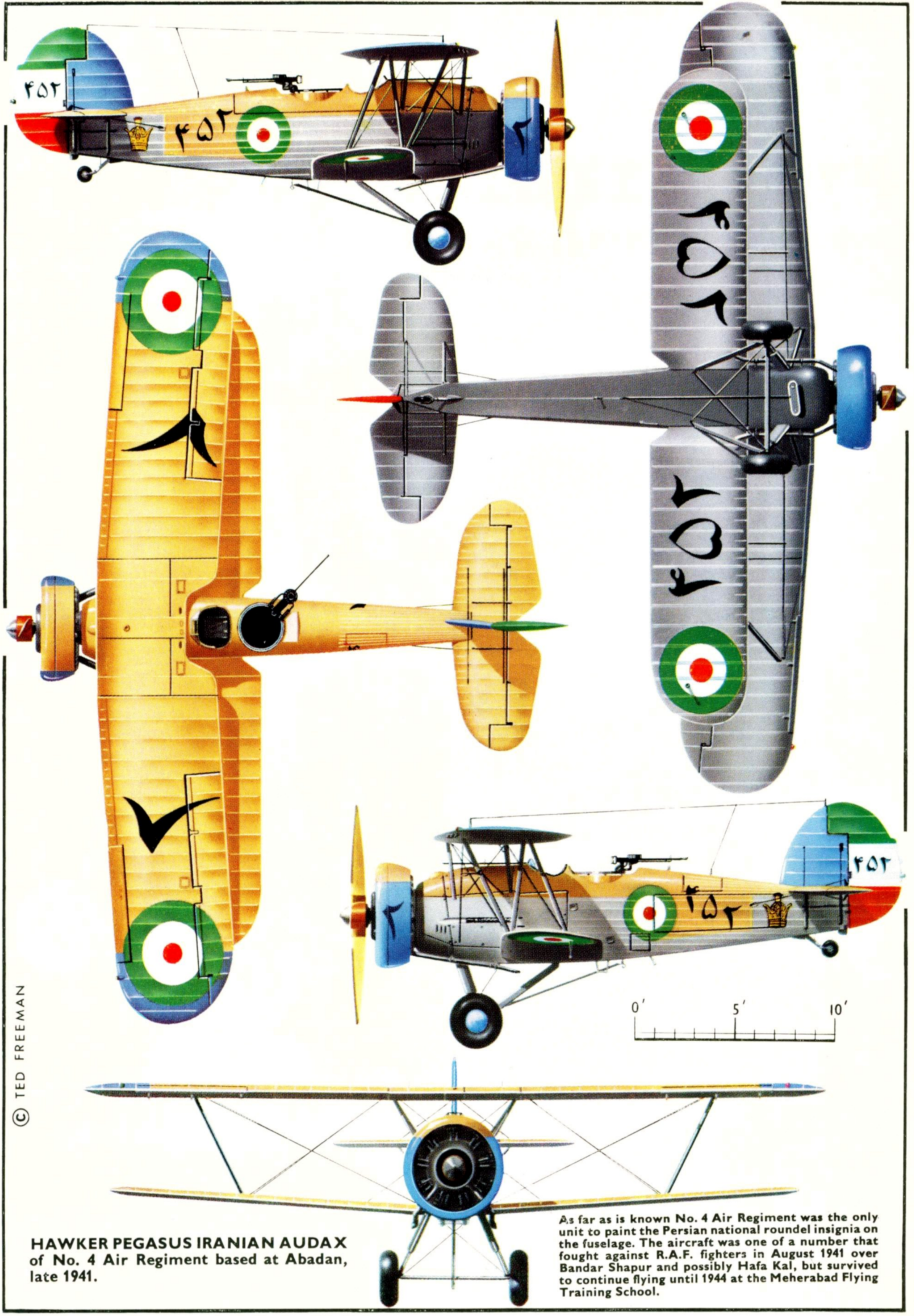


Structural and skinning details of the Audax fuselage, wings removed. Note the cord-cum-pulley arrangement for raising the radiator, and the position of the fuselage fuel tank in relation to the pilot's cockpit; the fireproof bulkhead was forward of this fuel tank. (Photos: F. K. Mason collection)



With the published statement in mid-1933 that Britain would be assuming wider policing responsibilities in Iraq from 1934 hence, it was decided to develop a specialist Specification, G.23/33, to call up a tropical version of the Hart for the express purpose of equipping an R.A.F. squadron to be based at the proposed new base (referred to much later as Habbaniyah).

For a prototype, a standard Hart, *K3013*, was withdrawn from R.A.F. service at Kenley and returned to Brooklands on 2nd October 1933 for installation of a Kestrel IB3 engine, strengthened wings, desert kit stowage and attachments for underwing stores. The full conversion was completed by Hawker in October 1934, although the aircraft had been flying for several months at the completion of each stage in the modification. Thereafter its life was spent at the various experimental establishments



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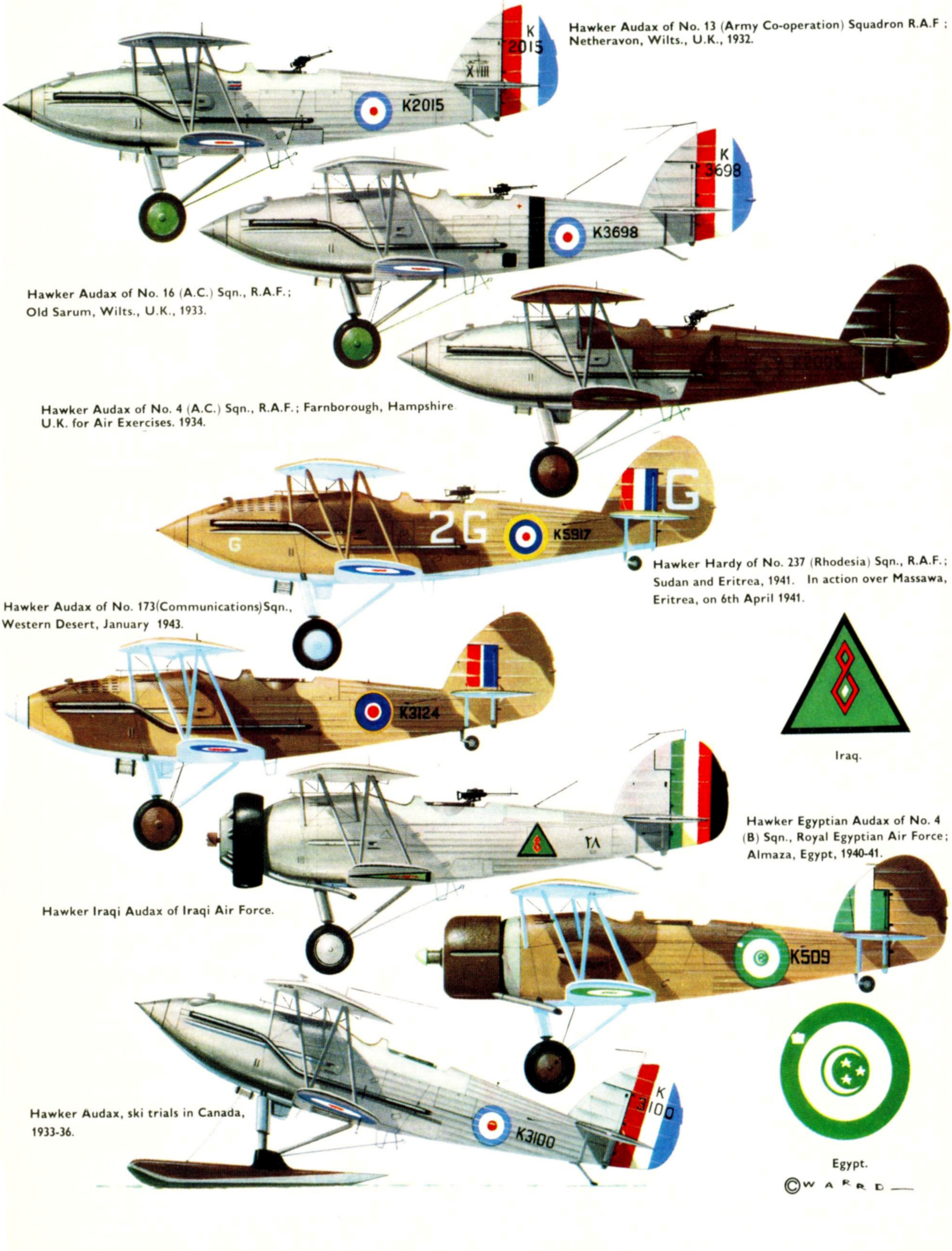
HAWKER PEGASUS IRANIAN AUDAX
of No. 4 Air Regiment based at Abadan, late 1941.

As far as is known No. 4 Air Regiment was the only unit to paint the Persian national roundel insignia on the fuselage. The aircraft was one of a number that fought against R.A.F. fighters in August 1941 over Bandar Shapur and possibly Hafa Kal, but survived to continue flying until 1944 at the Meherabad Flying Training School.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Hawker Audax of No. 13 (Army Co-operation) Squadron R.A.F ; Netheravon, Wilts., U.K., 1932.

Hawker Audax of No. 16 (A.C.) Sqn., R.A.F.; Old Sarum, Wilts., U.K., 1933.

Hawker Audax of No. 4 (A.C.) Sqn., R.A.F.; Farnborough, Hampshire U.K. for Air Exercises. 1934.

Hawker Hardy of No. 237 (Rhodesia) Sqn., R.A.F.; Sudan and Eritrea, 1941. In action over Massawa, Eritrea, on 6th April 1941.

Hawker Audax of No. 173(Communications)Sqn., Western Desert, January 1943.

Iraq.

Hawker Egyptian Audax of No. 4 (B) Sqn., Royal Egyptian Air Force; Almaza, Egypt, 1940-41.

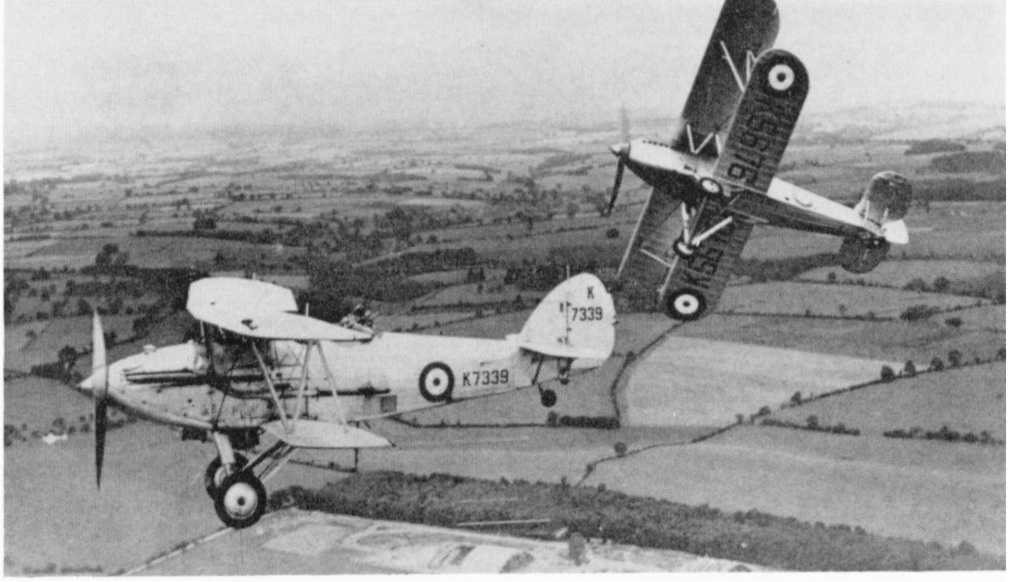
Hawker Iraqi Audax of Iraqi Air Force.

Hawker Audax, ski trials in Canada, 1933-36.

Egypt.

©WARD

In the evening of their flying lives, Audaxes served as gunnery trainers and glider tugs well into World War II. This picture, probably taken in 1938, shows Audax K7339 *(Avro-built) and Fury I* K5676 *during a No. 3 F.T.S. gunnery affiliation sortie.* (Photo: The Aeroplane)



in England until it was finally struck off charge on 23rd April 1943 with a total of 356 flying hours. At some time in its life it was allotted a ground instruction airframe serial *1448M*, though this may not have been taken up.

The first production Hardy contract, No. 288988/33, for 21 aircraft, *K4050-K4070*, was awarded to Glosters (as was all Hardy production) and all these aircraft were allocated to No. 30 Squadron in Iraq. Between October 1934 and April 1935 all were shipped from Sealand to the Middle East, being flown up to Mosul, the temporary base of No. 30.

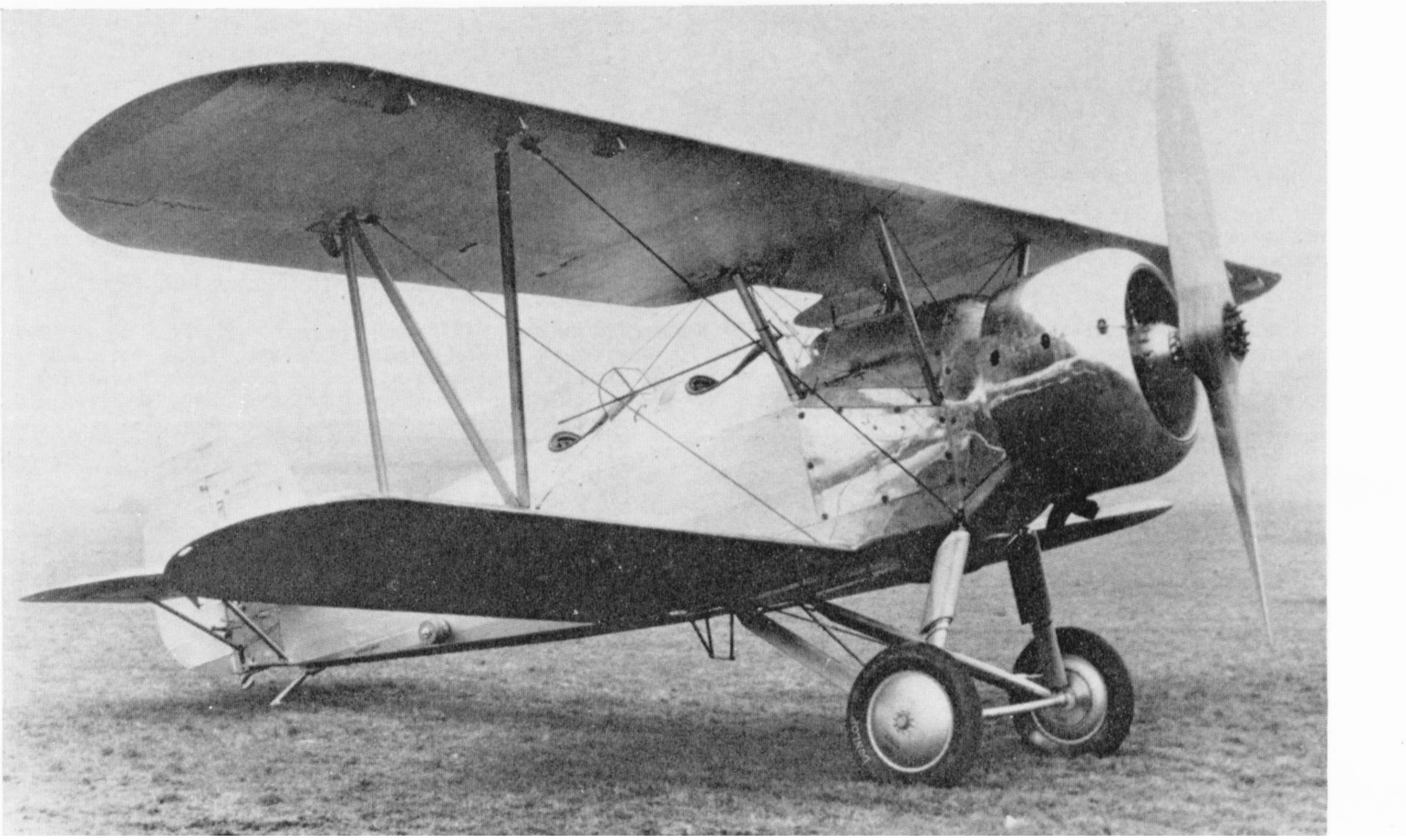
A second batch of 16 Hardy's, *K4306-K4321*, this time powered by Kestrel X engines, was ordered under Contract 323238/34, and these were all issued to No. 6 Squadron in Palestine in 1938 (having spent eighteen months in reserve or storage at Hinaidi). Many are the romantic stories that have been told of the Palestine Police during the late nineteen-thirties, and the exciting achievements of No. 6 Squadron pilots were certainly no less dramatic—nor less hazardous.

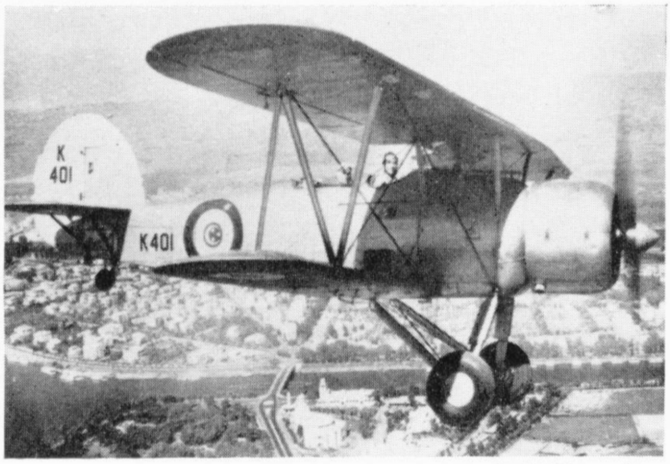
The desert attrition took its toll of Hardys, and a final production batch of ten aircraft, *K5914-K5923*, was eventually used principally as replacements to bring No. 6 Squadron up to its established strength of 21 aircraft. One aircraft, *K5919*, remained in the U.K. at Martlesham for various trials, and inexplicably appeared on the squadron strength (perhaps for communications) of No. 7 (Bomber) Squadron when struck off charge on 6th October 1943.

Thus from 1935 onwards the weight of the R.A.F.'s Middle East policing and military reconnaissance responsibilities rested upon Audaxes and Hardys of six squadrons deployed from India's North-West Frontier, through Iraq, Palestine and Egypt, to the Sudan. These duties continued undiminished as front line operations until by 1938 the absence of replacements and the appearance of the Bristol Blenheim in the Middle East resulted in re-grouping, re-allocation, and eventual relegation.

In 1938, Blenheims arrived on No. 30 Squadron whose Hardys were transferred to No. 6 in Palestine. The activities of this Squadron during that year reached something of a climax, and the "airpin"

Among the contracts dispersed by Hawker on formation of the Hawker Siddeley Group in 1936 was that negotiated for Audaxes by the Egyptian Government. A single prototype aircraft (with Osprey-type fin and rudder) was prepared, powered by a 750 h.p. Armstrong Siddeley Panther VIA, the Avro 674 type number being allotted. No registration number was allotted and the aircraft was sold as part of the contract. (Photo: Sir Sydney Camm)





The Egyptian Audaxes as delivered in March 1937 to Egypt differed from the original prototype configuration in the provision of Fairey Reed propeller, tailwheel, low pressure tyres and gun ring on rear cockpit. Six Audaxes were delivered in 1937 and 18 further aircraft, powered by Panther Xs, followed in the Spring of 1938. All the survivors acquired camouflage schemes early in World War II. (Photo: via R. C. B. Ashworth)

operations against marauding Arab bands involved many a dawn sortie with the threat of a burst of Vickers or even a 20-pound bomb. This was the scale of punitive measures—diminutive but effective.

WAR IN THE DESERT

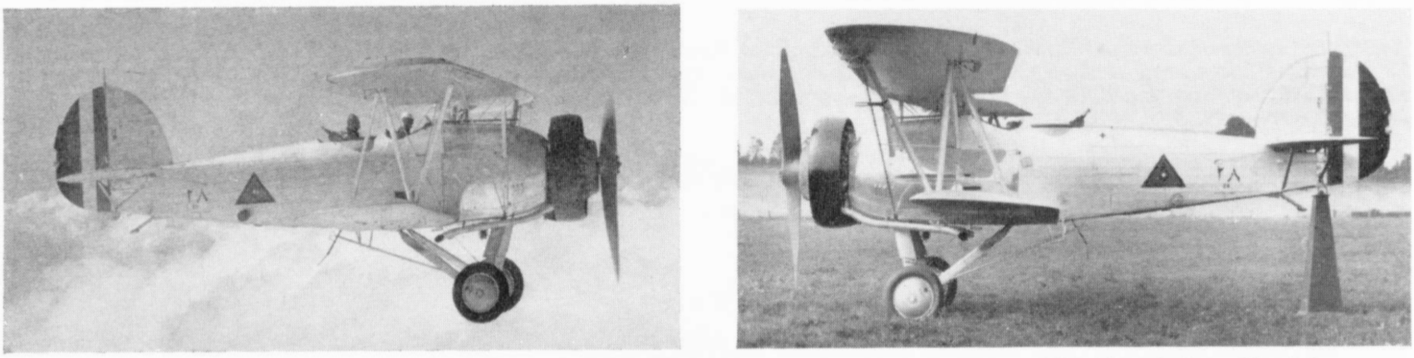
It is well known of course that when Italy entered World War II, Britain faced the *Regia Aeronautica* in the Middle East with a collection of truly antiquated aircraft which included such anachronisms as Valentias, Vincents, Londons and Hart Variants. Only the Blenheims, a few Sunderlands, Lysanders and Battles lent any semblance of a modern air force "guarding the gateway to the East". For too long the recalcitrant camel had occupied the field commanders' attention.

On 10th June 1940, Audaxes and Hardys were serving with No. 237 (Rhodesia) Squadron on Flight detachments based in British East Africa. Reserves for this Squadron were held at Ismailia and further aircraft could be obtained by "milking" various H.Q. Flights of their communications Audaxes.

The R.A.F. could do little to prevent the Italian assault on British Somaliland, for although the total of 206 aircraft (including about thirty belonging to the Kenya Auxiliary Air Unit) faced about 150 enemy machines, the initiative lay with the Italians. No. 237, in a small group commanded by Air Commodore W. Sowrey, was in action constantly between August 1940 and March 1941, at first striving to contain the Italian advance (often in the face of opposition from Fiat C.R.32s) and later supporting the counter operations that were to clear all Italian forces from East Africa.

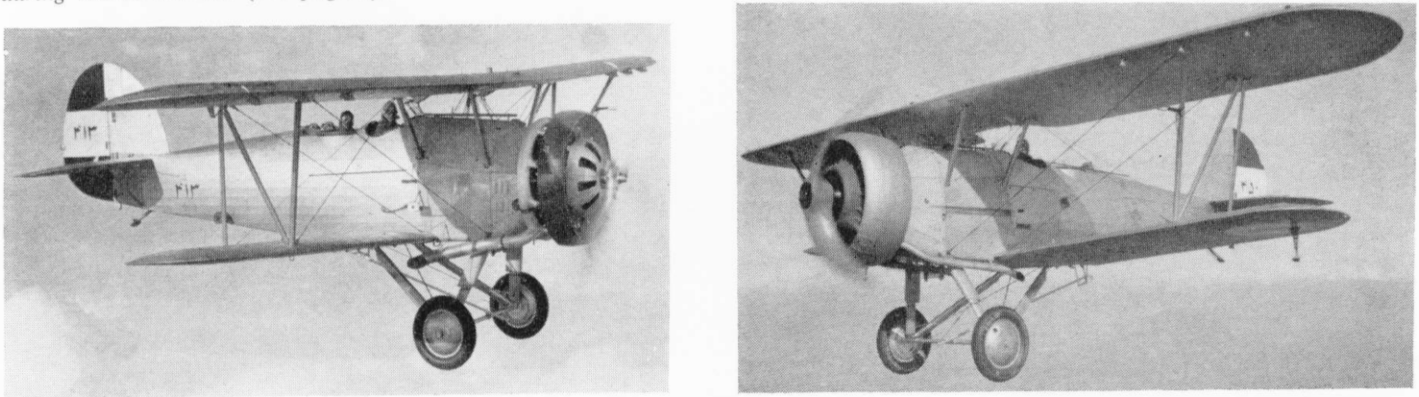
But the old biplanes were operating with inadequate, some would say no spares backing, and one by one the Audaxes and Hardys went missing or were otherwise written off after reconnaissance sorties over the land operations. An Italian air attack on Kassala in the Sudan during November destroyed all eight Hardys of 237 Squadron's B Flight, and the remainder was thrown into the Battle of Keren on 26th March 1941. A total of nine aircraft survived the campaign, were withdrawn to Rhodesia and were finally broken up during the next eighteen months.

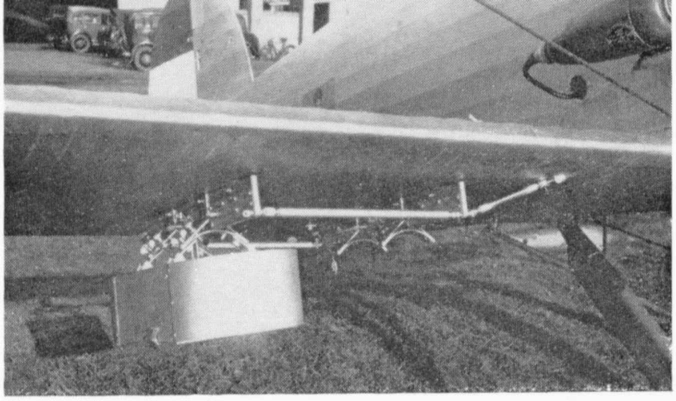
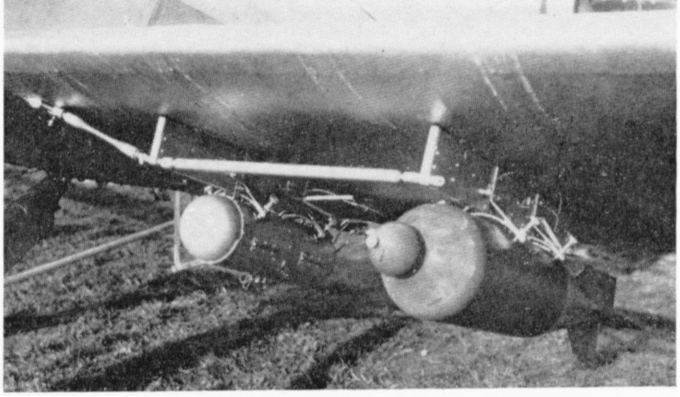
Probably the best known war exploits of the Audax were those involving the aircraft of No. 4 Flying Training School tucked away in the apparent security of Habbaniyah in Iraq. At the time that operations were drawing to a successful conclusion in East Africa (early April 1941), events in Iraq precipitated a revolt by the Iraqi Army directed by Raschid Ali. The morning of 30th April found nine thousand Iraqi troops and twenty-eight field guns investing the



The Iraqi Audax, like the Egyptian, was fitted with Osprey-type tail unit. 34 were delivered in 1935-36 and about 25 of these were still airworthy at the time of the 1941 Iraqi Rebellion, a number being encountered in action by No. 94 (F) Squadron between Habbaniyah and Baghdad towards the close of that campaign.
(Photos: Flight Neg. No. 10731S, and Hawker Aircraft Ltd., Neg. No. 91F

A total of 56 Audaxes was delivered to Persia. The first 30, delivered at the end of 1933, were powered by Pratt & Whitney Hornet engines driving 3-blade Hamilton propellers. The remaining 26, powered by Bristol Pegasus IIM and IIM2s, were delivered during 1934 and 1935, and about 20 of these were still flying when British and Russian forces occupied key areas in the Persian oilfields during World War II. (See page 2). (Photos: Sir Sydney Camm, and Flight Neg. No. 14603)



Light weapons and desert stores carried by the Persian Audaxes. (Photos: F. K. Mason collection)

R.A.F. base. Confident that such a show of force would impel surrender, Raschid Ali held his hand until 2nd May—when No. 4 F.T.S. went into action. Of a total of 60 aircraft, thirty-three were Audaxes (the remainder were Fairey Gordons and Airspeed Oxfords), and shortly after dawn this force commenced attacking the enemy ground forces. In place of the eight 20-pound bombs usually carried on training flights, the Audaxes had been hurriedly modified to lift two 250-pounders. Take-off was a laborious undertaking, the more tiresome due to the attention being paid to the runway by the Iraqi artillery, so the Audaxes were removed to the station polo ground where they acquired some cover from the surrounding trees; take-off however had now to be effected through the main gates of the base.

Losses began to mount, at first from intense small arms fire; it is recorded that an Audax instructor-pilot was hit in the shoulder by three bullets and slumped over his controls, sending the aircraft down out of control. On being pulled upright by his pupil-gunner, he recovered control and landed the Audax safely, using only one arm, before fainting away.

Later in the day enemy air opposition appeared . . . in the shape of Audaxes ! Some years previously Hawker had supplied thirty-four Bristol Pegasus-powered Audaxes to Iraq, and a fair proportion of these had survived the desert rigours based at Mosul with No. 1 (AC) Squadron, R.I.A.F.; however the appearance of Gladiators (flown to Habbaniyah from the Canal Zone) deterred the less politically-inspired members of the Iraqi Air Force, and most left the scene of action.

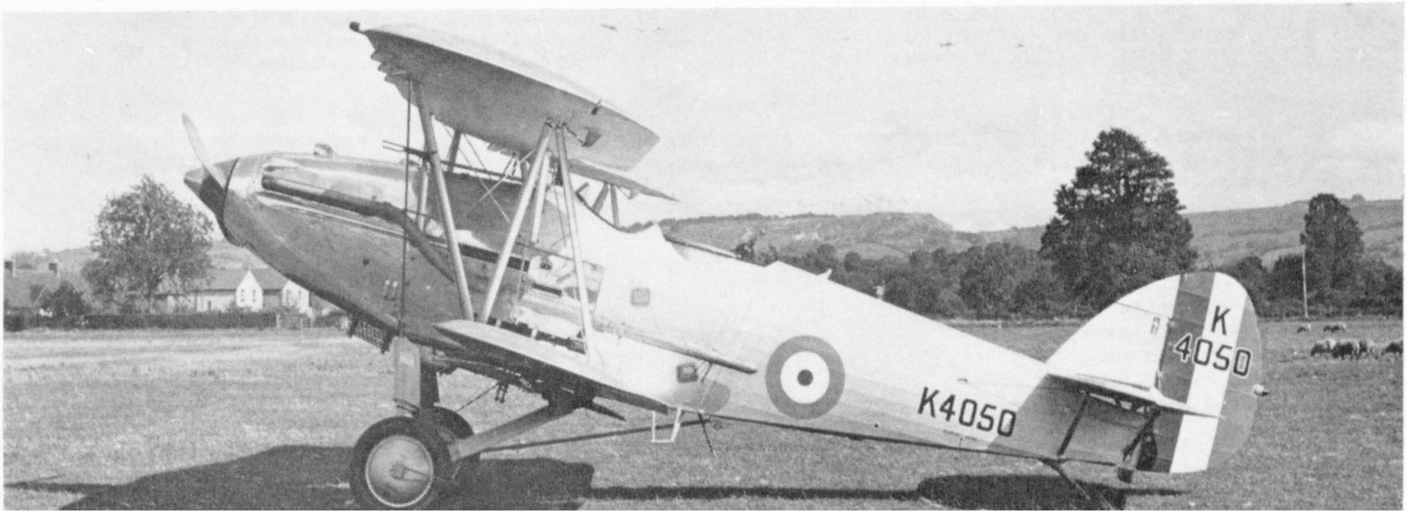
In the course of time the Iraqi rebellion was overcome and Habbaniyah was relieved. The remaining Audaxes of No. 4 F.T.S. continued in use as cover for the relief column which moved out to Baghdad to assist in the reinstatement of the Regent Abdulla Illah. Some aircraft reverted to their traditional rôle of army co-operation, their crews charged with the destruction of enemy telephone lines by the simple means of flying through them in their aircraft. On one occasion the wires proved too numerous for safety and the pilot landed, climbed upon the top wing and cut down the wires, while his gunner went to work with an axe on the poles.

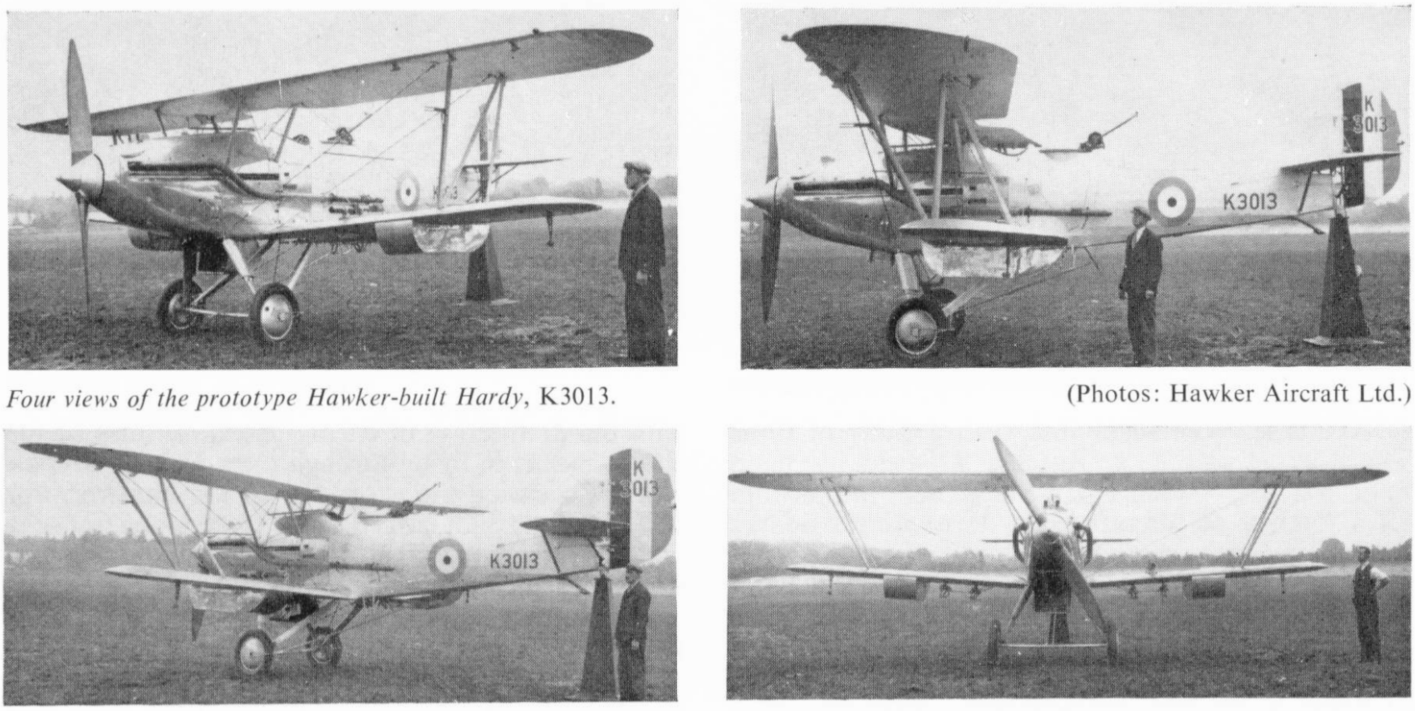
One further Middle East country saw the Audax in action. The presence of German "tourists" uncomfortably close to Allied oil interests in Iran failed to engender satisfactory reassurances from the Government of that country in August 1941, with the result that British and Russian forces moved in to protect their interests in the south and north respectively. These movements were resisted by the Iranian Air Force over Bandashapur, Hafa Kel and Khanikin, using Hawker Audaxes and Hinds, of which six were destroyed by R.A.F. fighters. Like the Iraqi Audaxes, 56 Persian Audaxes (of which one is featured on page 2 of this *Profile*) had been supplied way back in 1933 and 1934, and had entered service with each of the four Regiments of the Iranian Air Force, but with the arrival of Hawker Hinds most were redeployed with No. 4 Air Regiment based at Ahwaz. It is also believed that a further ten Audaxes were built under licence at the State Factory at Doshan Teppeh in 1939-40. One or two survived the War only to be scrapped when war-surplus aircraft became available at low prices.

* * *

Old soldiers never die . . . The Audax simply faded away. Some survived the tedium of glider towing training, straining to pull a Hotspur filled with apprehensive trainees into the English sky, only to be reduced to produce in 1943 when finally declared obsolete. Others, shipped out to No. 2 S.F.T.S. at Pretoria in 1940 and 1941, were struck off charge in 1944. But the Hardy literally died in battle, for, with only two known exceptions, every aircraft shipped to the Middle East succumbed to enemy action of one sort or another. As far as is known not one example

The first production Hawker Hardy, K4050, *built by Gloster, seen here at Brockworth.* (Photo: Flight Neg. No. 10756S)





Four views of the prototype Hawker-built Hardy, K3013. (Photos: Hawker Aircraft Ltd.)

of either type survives to this day, though remains may exist in South Africa.

© *Francis K. Mason, 1966.*

REPRESENTATIVE SERVICE ALLOCATION (AUDAX)

No. 2 (AC) Squadron, Manston: *K1995* (9/9/35; crashed 13/8/36), *K3055-K3066*, *K3085-K3090*, *K3104*, *K3718*.

No. 4 (AC) Squadron, Farnborough: *K1995-K1998*, *K2000-K2003*, *K2005*, *K2006*, *K2018* (1936), *K2021-K2026*, *K2030*, *K2031*, *K3079*, *K3689*.

No. 13 (AC) Squadron, Netheravon: *K2008-K2019*, *K2028*, *K2029*, *K2032*, *K3080-K3082*, *K3103*, *K7433*.

No. 16 (AC) Squadron, Old Sarum: *K2025* (1936), *K3691-K3702*, *K3707-K3712*.

No. 20 (AC) Squadron, India: *K4839-K4855*, *K5578*, *K5580*.

No. 24 (Communications) Squadron, Northolt: *K2008* (dual control), *K7383* (11/37).

No. 26 (AC) Squadron, Catterick: *K3067*, K3069, *K3071*, *K3073*, *K3076-K3079*, *K3091-K3096*, *K3101*, *K7383*.

No. 36 Squadron, Singapore: *K3720* (4/35, for artillery co-operation).

No. 61 (B) Squadron, Hemswell, 3/37: *K7391*, *K7427*, *K7428*.

No. 77 (B) Squadron, Honington, 1937: *K2002*, *K2006*, *K2021*, *K2030*, *K3081*, *K3103*, *K7391*, *K7433*.

No. 105 (B) Squadron, Harwell, 1937: *K7409*, *K7414*, *K7435*, *K7440*.

No. 114 (B) Squadron,Wyton, 1937: *K7409*, *K7410*, *K7414*.

No. 144 (B) Squadron, Hemswell, 1937: *K7415*, *K7420*, *K8312*.

No. 148 (B) Squadron, Scampton, 1937: *K7432*, *K7434*, *K7436*.

No. 208 (AC) Squadron, Middle East, 1935-39: *K3105-K3108*, *K3110*, *K3111*, *K3113-K3116*, *K3118*, *K3120*, *K3145*, *K7506*, *K7514*, *K7548*.

No. 211 (B) Squadron, Grantham, 1937: *K1998*, *K2001*, *K2011*, *K2013*, *K2014*, *K2016*, *K2018*, *K2019*, *K2024*, *K7454*.

No. 237 (AC) Squadron, Sudan, 1940: *K7514*, *K7515*, *K7521*, *K7526*, *K7528*, *K7534*, *K7540*.

No. 501 Squadron, A.A.F., 1937: *K3094* (crashed, 30/4/37).

No. 601 Squadron, A.A.F., 1938: *K2025*, *K3082*.

No. 609 Squadron, A.A.F., Yeadon, 1937: *K7433*.

No. 615 Squadron, A.A.F., 1937-38: *K3061*.

R.A.F. College, Cranwell, 1936-38: *K4383*, *K4384*, *K4391*, *K4400*, *K5153*, *K7378*, *K7424*.

Electrical & Wireless School, Cranwell, 1937: *K2033*, *K2034*, *K3100*.

No. 3 Radio School, 1941: *K2019*.

School of Photography: *K2003*, *K2025*, *K3066* (crashed 29/5/37), *K3097*, *K3098*, *K3102*, *K7432*.

School of Army Co-operation: *K2012*, *K2015*, *K3679*, *K3681-K3683*, *K3685-K3688*, *K5600*.

Flying Training Schools, 1937-41: No. 1: *K2001*, *K2006*, *K2021*, *K3059*, *K3064*, *K3082*, *K3085*, *K3101*, *K3103*, *K4380*; No. 2: *K3065*, *K3086* (crashed 12/4/38), *K3089*, *K3104*, *K5130*; No. 3: *K2001*, *K3060*, *K3087*, *K3088*, *K3101*, *K3103*, *K3143;* No. 4 (Middle East): *K3099*, *K3105*, *K3107*, *K3108*, *K3111*, *K3115*, *K3117*, *K3118* (missing, 13/5/41), *K3120* (missing, 6/7/41), *K3131* (lost in action, 4/6/41), *K3122-K3127*, *K7526*, *K7528;* No. 5: *K2018*, *K2021*, *K3067*, *K3087*, *K4380*, *K4381-K4383;* No. 6: *K2006*, *K3077*, *K3087*, *K3143*, *K4393*, *K4394*, *K4397;* No. 7: *K3073*, *K3093*, *K3143*, *K4388*, *K5122*, *K5138*, *K5175;* No. 8: *K3060*, *K3067*, *K3085*, *K3096*, *K4381*, *K5153*, *K5175;* No. 9: *K1998*, *K2006*, *K2017*, *K2019*, *K2030*, *K3059*, *K3060*, *K3064*, *K3080*, *K3082*, *K3096*, *K3101*, *K4381;* No. 10: *K3088*, *K5146*, *K5205*, *K5225*, *K7324*, *K7325;* No. 11: *K2011*, *K3059*, *K3064*, *K3085*, *K3091*, *K3689*. *K4396*. *K4401-K4406*; No. 12: *K2006*, *K2018*, *K4380*, *K5130*, *K5143*, *K5242*, *K7339;* No. 13: *K3085*, *K5175*, *K7324;* No. 14: *K1998*, *K3104*, *K5157*, *K5158*, *K7343;* No. 15: *K3060*, *K7175;* No. 16 (South Africa): *K7330* (1941).

Elementary & Reserve Flying Training Schools: No. 5: *K3081*; No. 13: *K8325*; No. 15: *K3101;* No. 19: *K2017;* No. 22: *K2012;* No. 23: *K3073*, *K3092;* No. 20: *K3143;* No. 26: *K2030;* No. 32: *K3079*, K3093*;* No. 33: *K3082*, *K3689;* No. 34: *K2025*, *K3080*, *K7432;* No. 35: *K1998*, *K2029*, *K3096;* No. 38: *K3060;* No. 42: *K3087;* No. 43: *K2018;* No. 44: *K2024;* No. 45: *K2011*, *K3091;* No. 46: *K4381*, *K7477;* No. 47: *K7323*, *K7474*.

Other Units and Trials Aircraft: *K2000* (Merlin II trials; Rolls-Royce and R.A.E., 1935-37); *K2006* (No. 101 (G) O.T.U., 4/42; No. 4 G.T.S., 12/42); *K2024* (No. 10 S. of T.T.); *K3057* (No. 1 S. of T.T.); *K3067* (trials at Hawker, R.A.E. and A. & A.E.E., 1933, with Vickers Mk. V guns); *K3078* (Hucknall Stn. Flt., 6/37; crashed 25/6/37); *K3079* (Odiham Stn. Flt., 9/40); *K3080* (Special Duty Flight, Boscombe Down, 7/35); *K3087* (No. 9 S. of T.T., 1940); *K3092* (No. 2 G.T.S.,Weston-on-the-Green, 2/42; No. 4 G.T.S., 9/42); *K3100* (ski undercarriage trials in Canada, 10/33-1/36); *K3114* (returned from M.E., 6/39; No. 1 School of Army Co-operation, 1940; to South Africa, 10/40; struck off charge, 3/9/44); *K3124* (No. 173 Squadron, 2/43); *K3683* (R.A.F. Elmdon, 10/40; No. 3 Radio School, 9/41); *K3687* (No. 2 G.T.S., 2/42; No. 4 G.T.S., 8/42; No. 20 (P) A.F.U., 1943); *K3719* (Napier Dagger I trial installation; became Hawker Hector prototype); *K5173*, *K7447* (R.A.F. Kidlington, Petroleum Warfare Dept., 1943); *K5244* (as *1528M* to Battersea Men's Institute, 6/39); *K7314* (Ternhill Stn. Flt., 7/36); *K7383* (No. 1170 Squadron, A.T.C., Elmore Green School, 10/42); *K7424* (No. 101 (G) O.T.U.).

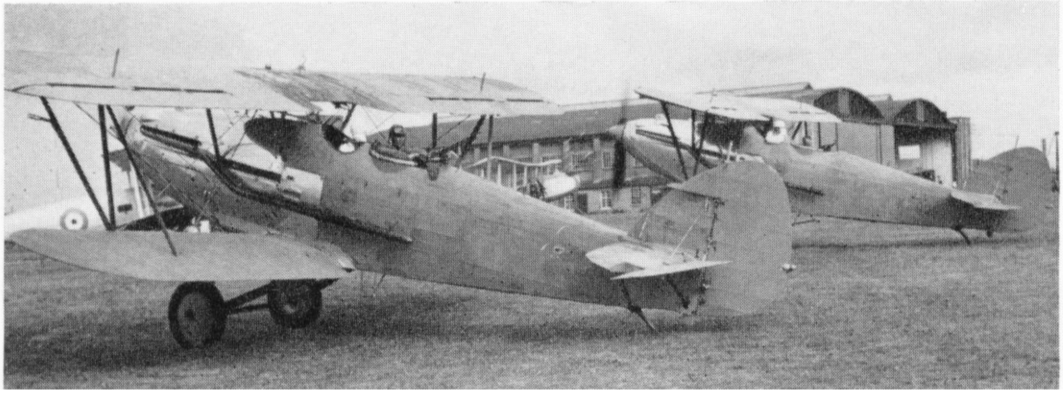
SERVICE ALLOCATION (HARDY)

No. 6 Squadron, Ramleh, Palestine (detachments to Semakh and Haifa): 1938-40: *K4050-K4053*, K4055, *K4056*, *K4059*, *K4060*, *K4062*, *K4063*, *K4064* (destroyed by Arabs, 1/10/38), *K4065-K4068*, *K4070*, *K4306* (destroyed by fire, 11/10/38), *K4307-K4316*, *K4317* (crashed) *K4318-K4321*, *K5914-K5918*, *K5920*.

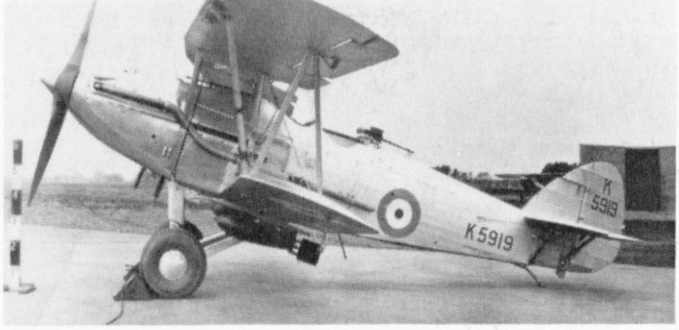
No. 30 Squadron, Mosul, Iraq, and Dhibban (Habbaniyah), Iraq, 1935-38: *K4050-K4056*, *K4057* (crashed, 7/1/38), *K4058* (crashed, 27/7/38), *K4059*, *K4060*, *K4061* (crashed, 19/5/36), *K4062-K4068*, *K4069* (crashed, 27/7/38), *K4070*.

No. 237 Squadron, British East Africa, 1939-41: *K5914* (failed to return from raid on Italian Somaliland, 15/5/40), *K5920* (after repair), *K5921-K5923* (latter aircraft struck off charge, 8/12/42).

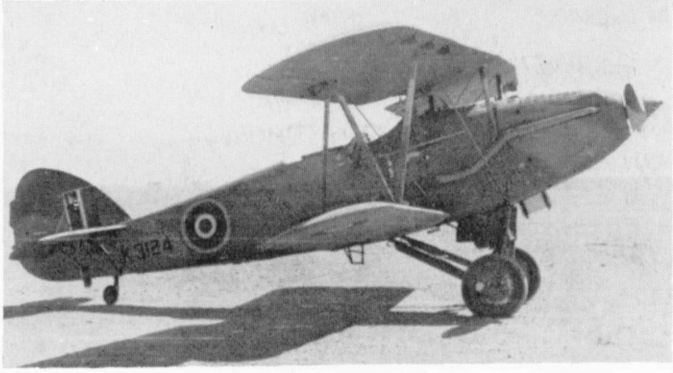
Other Aircraft: *K5919* (trials at Martlesham Heath, 1937; R.A.F. Watchfield, 9/40; No. 7 (B) Squadron, Oakington, 10/43).



Two Audaxes (K2005 *on the right*) *of No. 4* (*AC*) *Squadron during Air Exercises, circa 1934; it was customary to obliterate all markings using a drab colourwash which could be removed with relative ease when the squadrons returned to routine duties.*
(Photo: via P. J. R. Moyes)



The only Hardy not despatched to the R.A.F. in the Middle East (apart from the prototype) was K5919 *which was retained by the A. & A.E.E. at Martlesham Heath for trials with 250-lb. bombs and large-section low pressure tyres during 1937-38. Quite inexplicably this aircraft found its way on to No. 7 (Bomber) Squadron at Oakington, Cambridgeshire, late in 1943—presumably as someone's personal hack!*
(Photo: N. D. Zborowski)



One of the last Audaxes on flying duties in the desert was K3124 *which served with No. 173 (Communications) Squadron, 216 Group of the Mediterranean Air Command early in 1943. Note the absence of hook and gun ring, and addition of a tailwheel.*
(Photo: Sqdn. Ldr. G. R. S. McKay, via P. J. R. Moyes)

SPECIFICATION

	Hawker Audax	Hawker Hardy
Type	Two-seat army co-operation biplane	
Powerplant ...	530 h.p. Rolls-Royce Kestrel IB3 liquid-cooled 12-cylinder in-line engine driving 2-blade Watts wooden propeller. Also 550 h.p. Kestrel IB5; Pegasus IIM2 and Pegasus VIP for Iraq; Pegasus and Pratt & Whitney Hornet S2B driving 3-blade Hamilton propeller for Persia.	530 h.p. Rolls-Royce Kestrel IB3 liquid-cooled 12-cylinder in-line engine (*K3013*, *K4050-K4070*); 581 h.p. Kestrel X (*K4306-K4321*, *K5914-K5923*) driving 2-blade Watts wooden propellers.
Armament ...	One fixed forward-firing 0·303-inch Vickers Mark III or V machine gun on port side of nose synchronised to fire through airscrew arc. One 0·303-inch Lewis gun on Hawker-Scarff mounting on rear cockpit with five 97-round drums. Underwing racks for up to eight 20 lb. bombs.	
Dimensions		
Wing span ...	37 ft. 3 in.	37 ft. 3 in.
Length ...	29 ft. 7 in.	29 ft. 7 in.
Height ...	10 ft. 5 in.	10 ft. 7 in.
Wing area ...	348 sq. ft.	348 sq. ft.
Weights:		
Empty ...	2,938 lb.	3,195 lb.
Loaded ...	4,386 lb.	5,005 lb.
Performance:		
Maximum speed ...	170 m.p.h. at 2,400 feet	161 m.p.h. at sea level
Time to Height ...	8·65 min. to 10,000 feet	10·2 min. to 10,000 feet
Service Ceiling ...	21,500 feet	17,500 feet
Normal Endurance	3 hrs. 30 mins.	3 hrs.
Stalling speed (no wind)	55 m.p.h.	55 m.p.h.

HAWKER AUDAX AND HARDY PRODUCTION

AUDAX Specification	Contract No.	Number Built	Manufacturer	Serial Nos.	Remarks
7/31	26275/30	1	H. G. Hawker Eng. Co.	*K1438*	Prototype; ex-Hart.
7/31	102034/31	40	H. G. Hawker Eng. Co.	*K1995-K2034*	*K1999* & *K2020* converted to Hart (Special).
7/31 & 9/34	190684/32	91	Hawker Aircraft Limited	*K3055-K3145*	*K3072*, *K3128-K3138*, *K3140-K3144* converted to Hart (Special).
9/34	262679/33	43	Hawker Aircraft Limited	*K3679-K3721*	*K3679*, *K3680* etc. to No. 2 S.F.T.S., Pretoria, South Africa; *K3720* and *K3721* to Straits Settlements Volunteer Air Force.
9/34	322854/34	42	Gloster Aircraft Company	*K4365-K4406*	*K4369* converted to Hart Trainer; *K4380* etc. to India; *K4382* etc. to South Africa. Kestrel IB5.
19/34	333990/34	25	Gloster Aircraft Company	*K4838-K4862*	Audax (India). Almost all to No. 20 Squadron. Kestrel IB5.
34/34	389427/35	57	A. V. Roe & Co.	*K5120-K5176*	*K5138* etc. to S. Africa; *K5130* etc. to India. Kestrel X.
34/34	389426/35	56	Bristol Aeroplane Company	*K5201-K5256*	*K5205* etc. to S. Africa; *K5255* etc. to India. Kestrel X.
19/34	458948/35	25	A. V. Roe & Co.	*K5561-K5585*	Almost all to Karachi Air Depot, 5/36; some to No. 20 Squadron, others to training units. Kestrel IB5.
34/34	406498/35 389426/35	18	Westland Aircraft Ltd.	*K5586-K5603*	Contract originally placed with A. V. Roe. Kestrel X.
34/34	437223/35	162	A. V. Roe & Co.	*K7307-K7468*	*K7314* etc. to S. Africa; *K7387* etc. to India. Kestrel X.
34/34	437224/35	85	Bristol Aeroplane Company	*K7469-K7553*	*K7474* etc. to S. Africa; *K7506* etc. to Mid. East. Kestrel X.
34/34	406498/35 389426/35	25	Westland Aircraft Ltd.	*K8311-K8335*	Contract sub-let by A. V. Roe & Co. Kestrel X.
—	—	30	H. G. Hawker Eng. Co.	*401-430*	Persian Audax. Hornet S2B1G engines. 1933.
—	--	26	Hawker Aircraft Limited	*431-456*	Persian Audax. Pegasus IIM and IIM2 engines. Delivered 1934.
—	—	34	Hawker Aircraft Limited	*28-61* (?)	Iraqi Audax. Pegasus IIM2 and VIP8 engines. 1935-6.
—	—	6	A. V. Roe & Co.	*K400-K405*	Egyptian Audax. Panther VIA engines. 1937.
—	—	18	A. V. Roe & Co.	*K501-K518*	Egyptian Audax. Panther X engines. Delivered 1938.
HARDY					
G.23/33	279525/33	1	Hawker Aircraft Limited	*K3013*	Prototype Hardy; previously Vickers-built Hart.
G.23/33	288988/33	21	Gloster Aircraft Company	*K4050-K4070*	Kestrel IB engines.
G.23/33	323238/34	16	Gloster Aircraft Company	*K4306-K4321*	Kestrel X engines.
G.23/33	413880/35	10	Gloster Aircraft Company	*K5914-K5923*	Kestrel X engines. *K5919* to A. & A.E.E., remainder to Middle East.

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